



Safety and Frequency Control

When using radio transmitter and receiver equipment, it is important to be aware of what frequencies both you and other users are on. Manufacturers will display this information on the crystal included with the radio equipment. The information will show either Tx meaning Transmitter, or Rx meaning Receiver, and will have the frequency information, displayed in one of two ways. Either they will display the channel number on the crystal in the form of a two-digit channel number e.g. 60, or they will display the actual frequency on it i.e. 35.000 MHz.

The rule to convert from frequency in MHz to channel number is: remove the 35, then add 0.600 and use the first 2 digits after the decimal point.

E.g.	Frequency	Drop 35	Add .600	First 2 digits
	35.040	.040	.640	64
	35.170	.170	.770	77

Channel numbers should be displayed on your transmitter in the form of an easily identifiable pennant, orange background with white numbers. Don't forget that you must always abide by local site transmitter and frequency control methods e.g. peg board / marker systems etc.

Channel number / Transmitter crystal frequency conversion chart

Channel	Frequency	Channel	Frequency
60	35.000	73	35.130
61	35.010	74	35.140
62	35.020	75	35.150
63	35.030	76	35.160
64	35.040	77	35.170
65	35.050	78	35.180
66	35.060	79	35.190
67	35.070	80	35.200
68	35.080	81	35.210
69	35.090	82	35.220
70	35.100	83	35.230
71	35.110	84	35.240
72	35.120	85	35.250

Flying site transmitter control

There are a number of different systems or variations of them in use. Unless you are a lone flyer, there should be no reason not to use some kind of frequency control. There have been plenty of crashes or incidents throughout the radio controlled fraternity, which could have been avoided, had there been a simple peg-board in use at the time.

Pegboards are the most common system and the following are types in use:

Peg off

Probably the most popular among sites, this system requires a peg-board or stick with all the frequencies displayed by marker or sticker, and a peg or tag assigned to each one. The user removes the frequency peg or tag matching the frequency of his transmitter. No other pilot may use the frequency until the peg is returned to the peg board and available to another pilot.

The psychological effects of the user being "in control" of the frequency by having the peg, are very strong and it is generally a very good system. On the down side however, there is no indication of who is using the frequency, and there is always a possibility of people forgetting to replace the peg and subsequently, going home with it. This can then result in a duplicate peg being produced as a temporary measure and if the original does return, it is touch-and-go as to whether the temporary one is removed again.

Peg on

The next most popular, this system again requires a board or stick with all the frequencies displayed, but rather than a set of pegs on the board, all members have their own peg with their name which is placed on the board to denote that he is using the frequency. This will identify who is using the frequency. This system overcomes the possibility of taking the peg home, and if a peg is left on the board, the culprit can be identified by their name. The down side of this method is that it is not unusual for a peg to be lost, and you can end up with un-marked pegs or all manner of other objects such as keys, spanners, glow-clips etc. hung on the board to mark a frequency in use. Also, the psychological effect of being in control of the frequency is quite diminished as compared to the previous system explained, and this is an important aspect of ensuring that people remember to use the control system in the first place.

Combined

If it is suitable to implement, a combination of the two described above would be preferable. A set of pegs are used as in the peg off system, but when they are removed from the board, a users peg (with the users name and a different colour or design) is placed on the board to display who is using the channel. A further improvement is to use club or MACI membership card as the identifier attached to a member's individual peg. The "in control" psychology is back, and any missing pegs can be found by the name on the users peg. This system still can't eliminate human error, but it does go some way to fill a couple of pitfalls.

Indicator system

A fourth system which is often used by slope soaring sites is where the flyer is required to place some sort of indicator with his name and frequency number in a communal place on the ground or fence etc. to denote the use of a channel. A problem with this is that you may not know if the frequency is actually in use, or just that someone at the site has that frequency. As many slope sites may not be organised clubs, the advice is to talk to the other flyers that use the site, and agree on a general system to keep in place. Once this has been arranged, most flyers will generally be happy to conform to and promote the system among newcomers.

Scanners

The use of a scanner is highly recommended if available, and provides information relating to what frequencies are in use. It also shows up any channel spread, whereby a transmitter is actually broadcasting on more than one frequency due to bad tuning, or will show up an incorrectly marked frequency i.e. someone who 'thinks' he's on one channel when in actual fact is on a completely different one. A scanner is not however a frequency control on its own. It will not identify the user of any given channel, nor will it tell you of anyone's intention to switch on a transmitter. Therefore it is recommended only as a secondary system to a peg-board.

Transmitter pound

Almost universally used at competitions, fly-ins and displays, a transmitter pound is very effective if run correctly. Again though, it is used in conjunction with some form of peg-board system and sometimes also a scanner. The whole transmitter is handed in to the pound, and will only be given out to the user if the pound attendant is sure that the frequency is free. This process eliminates the possibility of forgetting about the peg before you switch on, but is unfortunately labour intensive as it requires an attendant at all times.

There are probably numerous variations of these methods in use at model sites around the world, but the important thing is that a system of some type is used at all sites.

A word of caution also, and a very important one, no matter what system is in use, do not assume that if you visit another club or site, that they will be using the same system. If you do go to another site, ALWAYS, ALWAYS check with others upon arrival, even before you assemble the model, "What frequency control system do you use here?" Even if you have flown at the site before, it doesn't mean that the methods haven't been changed since you last visited.

One last note is that whichever control system is used, a pennant in white letters on an orange background, large enough to be clearly visible to other flyers should be attached to your transmitter displaying your frequency.